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This chapter is published as the introduction to a six-chapter interim report on an experimental program at Southern Illinois University. 275 graduating high school seniors in the bottom one-third of their class were identified as high potential low achievers and admitted into the University to participate as experimental and control subjects in a special curriculum program during their freshman year. These students were randomly assigned into two experimental and two control groups. 200 university freshmen from the upper two-thirds of their graduating class were divided into two norm groups. One-half of the students in each of the six groups had composite scores on the standardized entrance examination above the mean for all freshmen entering in 1962. The other half had scores below the latter mean. Subjects in experimental Group I participated in a special core curriculum program and those in experimental Group II took part in a counseling program, received remedial instructions, and were enrolled in a number of general education courses. Control subjects in Group III had only administrative contact with the program. Various research questions related to the program and its impact are under investigation. (For other chapters of this report, see UD 005309, UD 005310, UD 006859, UD 006860, and UD 006861) (LB)

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A TWO-YEAR REPORT ON THE EXPERIMENTAL FRESHMAN YEAR PROGRAM

Respectfully Submitted

to

President Delyte W. Morris

Southern Illinois University

by

Experimental Freshman Year Staff

Robert J. Kibler, Director and Editor

November 15, 1964

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ACKNOWLEDGEMENTS

The Experimental Freshman Year research program was conceived and conducted as part of the continuing effort by Southern Illinois University to investigate more effective methods of meeting the needs of instruction at the university level. The Experimental Freshman Year Program could not have been possible without the cooperative efforts of the Southern Illinois University administration who are committed to examine important problems facing higher education. President Delyte W. Morris has supported this project since its conception by Harold L. Cohen. Among the other University administrators who have been involved in the project in the past two years are Vice Presidents Charles D. Tenney and John E. Grinnell, Dean William J. McKeefery, Associate Dean John O. Anderson, Keith W. Smith, Jack W. Graham, Robert A. McGrath, Thomas C. Oliver, and John W. Hamblen.

An interdisciplinary advisory committee named by President Morris assisted in planning the design for the project and in resolving problems related to the project. The members of this committee were John O. Anderson, Chairman, Harold Cohen, Peter Hemingway, Robert Kibler, Oliver Kolstoe, Freeman Macomber, Kenneth Orton, and Isaac Shechmeister. The counsel and assistance provided by this committee proved instrumental in shaping the direction of the project.

It would have been difficult to conduct the project without the helpful assistance of the superintendents, principals, and counselors throughout

the state of Illinois. The support of these persons made it possible for the University to communicate with many potential applicants for the project.

Harold L. Cohen was responsible for initiating the project and was coordinator for the Group I program. The Group I staff consisted of Mary Cohen, Howard Cotton, Donald Glickman, Grant MacLaren, David Miles, and Albert Warner. The staff members responsible for working with the students in Groups II and III were Sandra W. Lutz, Jean P. Baumgardner, and Janet R. Bleem. Robert J. Kibler assumed the overall responsibility for directing the project during the instructional phase of the program and coordinated the treatment and control programs for Groups II and III.

The responsibility for analyzing the data and writing this two-year report was the charge of the following staff members: Robert J. Kibler, David T. Miles, Charles Gruner, Michael Bartlett, Jean Schanen, Sandra Lutz, Herbert Meyer, David Martinez, and Grace Weshinskey.

The following staff members made the following contributions to this report: Robert J. Kibler edited the report, wrote Chapter IV, and participated in writing Chapters I, II, III, and VI; Charles Gruner wrote Chapter V and participated in writing Appendix A in Chapter IV; David Miles participated in writing Chapters III and VI and assisted in preparing Chapter IV; Jean Schanen participated in writing Chapter II and assisted in preparing Chapter IV; David Martinez participated in writing Chapter I; Michael Bartlett wrote the computer programs and carried out all statistical analysis conducted for this report. Herbert Meyer designed and supervised some of the data processing operations. Grace Weshinskey provided editorial comments relative to the entire report. Arma Jones served as the secretary for two years on the EFY project.

The director of the project is also indebted to several readers for their comments relative to all of the chapters presented in this report. The following readers were asked to examine the entire report and to submit critical reviews on the material presented: Harold L. Cohen, Mary D. Cohen, Allen J. Edwards, Jack W. Graham, Thomas E. Jordon, Oliver P. Kolstoe, Thomas C. Oliver, Isaac L. Shechmeister, and Keith W. Smith.

During the two and one half years of the EFY Program, members of the University service and administrative staff made contributions which deserve special note. The Registrar's staff was extremely helpful in selecting the EFY students, in planning and scheduling courses for these students, in providing data and transcripts when requested, and in dealing with the many special problems which such an experimental program develops. The following members of the Registrar's staff were particularly valuable to the EFY staff: Robert McGrath, Registrar, Sue Eberhart, H. W. Wohlwend, Marion B. Treece, Roland Keim, Leslie Chamberlin, and Wilber Venerable. Mary Walker and her staff at the University Stenographic Service consistently provided service of commendable excellence. The dedicated efforts expended at Stenographic Service during the entire two and one half years of this program are truly appreciated. The Office of Research and Projects is the agency to which the burdens of handling fiscal operations, of processing various forms, and of dealing with many problems were assigned. The Research and Projects staff consistently made an effort to facilitate the smooth operation of the project. Too numerous to mention are the other agencies in the University who have made some contribution to the efficient conduct of this project.

Robert J. Kibler, Director
Experimental Freshman Year Program
October 6, 1964

PREFACE

This is a two year interim report to President Delyte W. Morris on the Experimental Freshman Year Program (EFY) conducted at Southern Illinois University, Carbondale, Illinois. The EFY is a four-year experimental research project designed to investigate some problems related to educating students who graduate in the lowest third of their high school graduating classes.

Consistent with Southern Illinois University's philosophy of providing service, education, and research for the citizens of the region, state, nation, and other nations, President Delyte W. Morris in May, 1958, and then again in October, 1961, posed the question of meeting the University's responsibility to the University faculty (see "Minutes of Faculty Meeting").

> Since the University serves a large Southern Illinois area in which there are no other four-year colleges, does it not have a responsibility to those students who, because of variations in home backgrounds, economic conditions, and previous educational opportunities, find themselves poorly prepared academically and otherwise to do successful college work . . . ? Should the University exclude these students from entrance, or should it design a program which will meet as many as possible of their needs? Or is there another solution to the problem?

President Morris then requested that members of the faculty submit ideas indicating how Southern Illinois University could assist in this local and national problem dealing with the possible loss of intellectual wealth present among those students who find themselves poorly equipped to enter a university.

Harold L. Cohen, Associate Professor and Chairman of the Department of Design, submitted such a proposal to President Morris in November, 1961. Cohen recommended that there be established a one-year educational program

designed for selected students graduating in the lowest third of their high school class. The program was approved and was initially titled "Synergetics." When the scope of the research was later expanded, the program was renamed the "Experimental Freshman Year Program."

A staff was appointed to assist Cohen in selecting students for the program and in preparing the curricula. The President appointed an advisory committee to assist in the planning and design of the educational experiment. Finally, a director of the program was appointed during the summer of 1962.

The instructional phase of the program was in progress during the 1962-63 academic year. The data analysis phase of the project has been in progress since July, 1963. This two-year report was written during the summer and fall of 1964.

The report is organized into six chapters. Chapter I introduces and defines the problem and identifies the research questions investigated. Chapter II is a comprehensive review of recent literature related to low achievers. Chapter III describes the procedures followed in the study. Chapter IV includes the results of the data analysis. Chapter V is a complete report dealing with biographical and attitudinal data on students who participated in the project. Chapter VI provides a summary of the report, the conclusions drawn from the study, and the recommendations for future research and changes in University procedures. Each chapter is numbered and tabled independently. The appendices and references for each chapter appear at the end of the chapter.

Robert J. Kibler, Director
Experimental Freshman Year Program
October 31, 1964

Southern Illinois University

A TWO-YEAR REPORT ON THE EXPERIMENTAL FRESHMAN YEAR PROGRAM

CHAPTER I

INTRODUCTION

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SOUTHERN ILLINOIS UNIVERSITY

Experimental Freshman Year Program

CHAPTER I

INTRODUCTION

This is a two-year report of some effects of two multivariable treatments on college freshmen who had low grades in high school. The treatments presented during the 1962-63 academic year included special curricula, and remedial instruction and counseling. This study concluded in October, 1964, two years after the beginning of the experiment, reports some findings related to the effects of these treatments. The reader is cautioned that these two-year findings are interim findings for a four-year study.

The Problem

The Experimental Freshman Year Program was initiated to find methods for identifying those high school students who have low grades but who can succeed in college and to determine whether such students with a history of low achievement in high school would benefit from special curricula, instruction, or counseling in their freshman year of college.

Changing Concept of Education. Traditional concepts of education have changed strikingly in the past decade. As the demands of a highly automated and technological society are increasingly brought to bear upon individuals, their role in society has been changed, and inadequacies in education have become tragically evident. The U. S. Department of Labor reports that the most highly educated of all workers are most in demand in the professional,

clerical, and service occupations. Professional, managerial office, and sales workers outnumbered craftsmen, operatives, and laborers for the first time in the nation's history in 1956 (U. S. Department of Labor, 1961). Perhaps of even greater concern in the changing concept of education is the fact that it is estimated that there will be 7.5 million school dropouts during the 1960's, 2.5 million dropouts which will include people who will not have completed grade eight. Fortunately, some educational programs are currently being planned to take care of some of these needs (U. S. Department of Health, Education, and Welfare, 1963).

R. Buckminster Fuller (1964), Research Professor at Southern Illinois University, commented in his recent inventory of world resources, on the task and responsibility of education in a global perspective.

> It is well to remember that the comprehensive world economics are going to force vast economic reforms of industries and nations which incidentally will require utter modernization of the educational processes in order to survive--our educational processes are in fact the upcoming major world industry. . . .
>
> As we effectively dis-employ man as a mechanical worker and pay him to return to his studies this will bring about profound changes in our concept of education itself. Education 'to earn a living' will become an anachronism. Education will develop in quite unprecedented ways.

Educators, stimulated by the inadequacy of the educational system and anticipating these problems, are re-evaluating and changing many of the traditional concepts of education.

The traditional concepts of a college education may also be susceptible to change. The question of what should constitute an education is considered in one instance by the design of a liberal arts and sciences college. A panel of natural scientists and Hugh Odishaw (1964), Executive Director, Science Space Board of the National Academy of Sciences, has proposed an

undergraduate liberal arts program of five to six years in length. The traditional four-year program was considered to be insufficient in light of the panel's objectives to emphasize "the student's capacity to investigate, to analyze, to think, to understand, to synthesize, to recognize interrelationships, and to communicate."

The impending problems in education were perhaps best outlined in Sidney Tickton's statement (1963) summarizing some of the more significant statistics relative to education in the future.

1. The total U. S. population can be expected to rise from 179.3 million in 1960 to 285.0 million by 1985.
2. There will be a 70 per cent increase in the number of children and young adults going to school or college from 1960 to 1985 (from 43.8 million to 74.5 million).
3. The trend toward automation can be expected to accelerate. The number of skilled personnel can be expected to increase from 35.3 million to 72.9 million from 1960 to 1985.
4. The number of young people of college age (18-24 years of age) will increase from 16.2 million in 1960 to 32.0 million in 1985.
5. College and university enrollments are estimated to increase from 3.6 million in 1960 to 12.8 million in 1985.

Identifying Students for College Success. Any examination of traditional concepts of education in light of their application to present needs will eventually raise the question "who shall recieve a higher education?" or, in terms of day-to-day realities, "What shall the college admission policy be?" An answer to this latter question involves decisions of at least two types. The first type of decision is based on the capacity of physical

facilities to handle an increased enrollment. The second type of decision is one of values (Berdie, 1960).

It is obvious that physical facility capacities have increased sharply in recent years. The physical plant value per student rose from $3,818 in 1958 to $4,199 in 1960. Expenditures for plant expansion by land grant institutions increased from $95,489 in 1952-53 to $379,770 in 1962-63. Federal funds allocated to land grant institutions for instruction and facilities amounted to more than $14,500,000, and for plant expansion over $25,500,000 in 1962-63 (Simon & Grant, 1964). Hopefully, these indications of substantial increases in facilities may provide the physical space necessary to instruct the large number of students entering universities.

Value judgments concerning the objectives of higher education, the range of society's educational needs, and the relative importance of the society's needs for different sorts of trained citizens must also be made. The question of social responsibility for a universal education is examined in a paper titled "Universal Educational Opportunity Beyond the High School" by Arthur F. Corey (1964), Chairman of the Educational Policies Committee of the National Education Association. This paper proposes "that the nation re-define its concept of universal educational opportunity to include at least two years beyond the high school . . . that these years should be aimed primarily at intellectual growth and without cost to any high school graduate. . . ." A Master Plan for Higher Education in Illinois provides specific recommendations for providing such opportunities through junior colleges (Illinois Board of Higher Education, 1964). To such value judgments must also be added consideration of the responsibility of universities to those members of the community who may desire an education, but because of

socio-economic or other reasons, are either unable to meet the minimal requirements for entrance or are not prepared with adequate academic skills to perform successfully in college. Substantial empirical research on the matter of identifying potentially successful students from various achievement levels is discussed in Chapter II of this report.

Adapting Instruction to Changing Educational Needs. There is not only the question "Who should be admitted to college?" There is also the question: "How shall we instruct the large number of students who will be admitted to colleges?" The question regarding ways to instruct student populations of unprecedented size is solved in part by research from educational and scientific technologies. The traditional channels for learning such as the lecture system and the book, are being superseded by highly efficient educational devices (Cronbach, 1962; Ellis, 1962; Lewis, 1961; Maier and Jacobs, 1964). Many of these devices apply the principles of behavioral psychology to the learning process (Wendt and Rust, 1962; Reed and Hayman, 1962; McNeil, 1964). Programmed courses in the form of audio-visual "packages" are available. Telephone network courses such as those at Stephens College (Rubin, 1964) in Missouri can economically bring master teachers within the conversational domain of large numbers of students. According to initial studies, "PLATO," (Easley, 1964) a computer controlled teaching system at the University of Illinois, has as estimated simultaneous teaching capacity of one thousand students and provides an instant response to the needs of each student.

It was concern for such matters specified above which prompted the undertaking of research on the problem which is the subject of this study. Matters related to this problem are considered more thoroughly in Chapter II

of this report. The remainder of the discussion of the nature of the problem focuses on specific concerns related to Southern Illinois University.

Experimental Freshman Year Program

Admission policies (Southern Illinois University, 1964) at Southern Illinois University allow students to enter the University unconditionally if they have graduated in the upper two-thirds of their high school graduating class. Students who rank in the lowest one-third of their high school graduating classes are permitted to enter Southern Illinois University only during Summer, Winter, or Spring Quarters. Exceptions to this rule are made when students who desire to enter Fall Quarter have entrance examination scores on the ACT above the current mean score.

There are no programs or educational facilities available which are designed to meet the special needs of the low achiever who desires to continue his education at the University. The lowest-third high school graduate experiences the same program and is expected to meet the same standards of academic achievement as members from the upper two-thirds of his graduating class.

The Experimental Freshman Year Program was originated to attempt to correct this seeming lack of special curricula. It was based on the contention of Harold Cohen, Chairman, Department of Design at Southern Illinois University, that there was "wealth of latent creative and intellectual abilities" among the several thousand students graduating in the lowest one-third of their high school classes throughout the state of Illinois. Cohen further contended that this wealth of creative and intellectual abilities was not reflected by performance on standard achievement or aptitude tests, nor, in fact, by performance in standard course work.

Objectives

The general objectives of the EFY Program were as follows:

1. To examine current selection criteria for admitting low achievers into Southern Illinois University;
2. To seek methods to identify students who have a history of low achievement in high school but who would succeed in college;
3. To determine whether a special freshman education program involving a core curriculum and a variety of instructional techniques affect the later academic performance of a group of low achievers;
4. To determine whether a freshman educational program including remedial training, counseling, and restricting the number of credit hours carried each quarter affects the later academic performance of a group of low achievers.

Research Design

A research design adopted for the EFY Program specified that students from the lowest one-third of their high school graduating classes would be selected by different methods and assigned to two experimental groups and two control groups. Two other groups in the study, the norm groups, were to consist of students who had graduated in the highest two-thirds of their high school classes. Half of the students in each of the six groups were to have composite scores on the entrance examination (American College Test Battery) above the mean for all freshmen entering in 1962, the other half of the students in each group were to have composite scores below the mean for all entering freshmen.

The two treatment programs being investigated were administered to the two experimental groups during their freshman year in 1962-63. The control and norm groups also attended school during that time.

Two major criteria were selected to determine whether successful students had been identified and whether students benefited from the freshman year treatments. The first and most important criterion selected was the completion of a four-year college degree. The other major criterion selected was the grade point averages of students completing a four-year degree. The grade point averages for those students not completing a degree, even though taking course work in pursuit of a degree, would provide a measure of relative achievement. Further discussion of the evaluation of the EFY Program is contained in Chapter IV of this report.

It should be made clear that the criterion for determining the effects of the treatment or control programs is graduation. This report, which has been prepared two years after the EFY Program started, contains only two-year or interim findings. The final results of the EFY Program will not be available for at least two more years.

Research Questions

In order to determine whether or not the general objectives of the EFY Program were met, specific research questions were asked. The questions are listed under the following four headings: occupations, retention, quality of academic performance, and prediction. The groups mentioned in each question refer to the six groups outlined in the previous section, Research Design. Groups I and II are the experimental groups; Groups III and IV are the control groups; and Groups V and VI are the norm groups. The subgroups mentioned in the following questions refer to the division within each of

the six groups, a division made on the basis of entrance examination (ACT) scores. Approximately half of the subjects in each group had scores above the mean, and half had scores below the mean. A detailed explanation of the design of the project is presented in Chapter III.

Occupations:

1. Is there a significant difference among groups with regard to the occupations in which subjects were engaged during the year following the treatment year?

Retention:

2. Is there a significant difference among groups or subgroups with regard to the number of subjects completing each quarter when compared with the number completing the previous quarter?
3. Is there a significant difference among groups or subgroups with regard to the number of subjects who completed each of the six quarters when compared to the number of subjects who started the program?
4. Is there a significant difference among groups or subgroups in regard to the number of subjects who completed the fourth quarter, the fifth quarter, or the sixth quarter when compared to the number of subjects who completed the first year?

Quality of Performance:

5. Is there a significant difference among groups or subgroups with regard to the mean cumulative grade point averages (GPA) at the end of six quarters of college work?

6. Is there a significant difference among groups or subgroups with regard to the mean cumulative GPA at the end of the first year?
7. Is there a significant difference among groups or subgroups with regard to the mean cumulative GPA at the end of four quarters of college work?
8. Is there a significant difference among groups or subgroups with regard to the mean cumulative GPA at the end of the fifth quarter.
9. Is there a significant difference among Groups I, II, III, and IV with respect to the mean cumulative GPA for general studies course areas?
10. Is there a significant difference among Groups I, II, III, and IV in respect to the mean cumulative GPA for the second year, the second year GPA considered independently from the grades for the first year?
11. Is there a significant difference between each group's or subgroup's first quarter mean GPA and its cumulative sixth quarter GPA?
12. Is there a significant difference among groups or subgroups on The General Culture Test composite and/or sub-test scores?

Prediction of Academic Performance:

13. Is there a significant relationship between the first quarter GPA and the cumulative GPA for subjects within groups or subgroups at the end of the first year of college work?

14. Is there a significant relationship between first quarter GPA and the cumulative GPA for subjects within groups or subgroups at the end of six quarters of college work?
15. Is there a significant difference among an Interviewer's Rating Categories with regard to the number of subjects in each category who started the program and completed the sixth quarter?
16. Is there a significant difference among an Interviewer's Rating Categories with regard to the number of subjects in each category who completed the first year of the program and completed the sixth quarter?
17. Is there a significant difference in the cumulative GPA's at the end of six quarters among all subjects in Groups I, II, and III combined, classified by the Rating Classification System?
18. Is there a significant relationship within groups and subgroups between students' entrance examination (ACT) scores and their sixth quarter cumulative GPA?

In this document, the level of statistical significance considered acceptable for reporting findings related to the above questions was .05 level or greater.

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